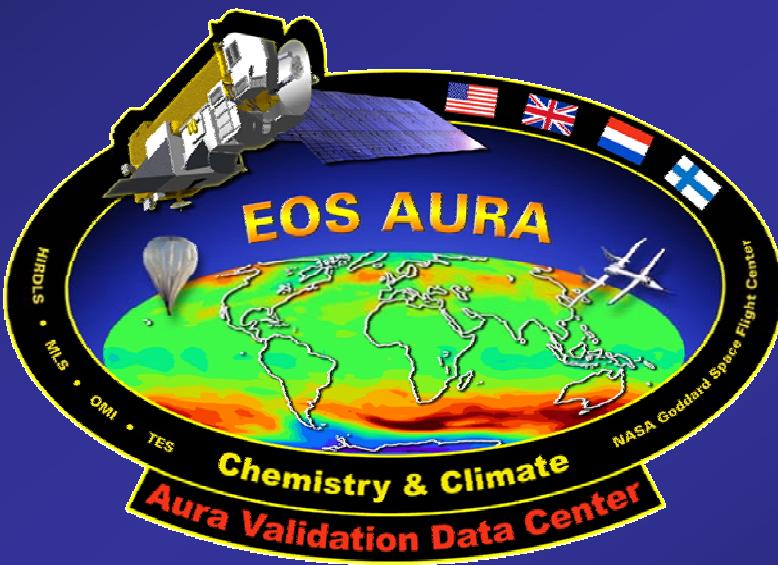


The Aura Validation Data Center



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NASA Goddard Space Flight Center



Aura Validation Data Center
Aura ST, November 2005
<http://avdc.gsfc.nasa.gov/>

What is the AVDC?

- ✓ AVDC established to support the validation of Aura
 - HIRDLS, MLS, OMI and TES
- ✓ Archive for Aura validation datasets
 - Groundbased network data
 - Aircraft missions and large balloon campaigns
 - Other satellite datasets
- ✓ Aura instrument data in support of validation
 - Station overpass and geographical subsetting
 - Instrument FOVs: collocation tools and 15-day predictions
- ✓ Support validation field deployments/missions



Implementation

- ✓ Central facility at NASA GSFC
 - <http://avdc.gsfc.nasa.gov/>
- ✓ 6-CPU Xserve cluster, 7TB SAN
 - Shortly: 10-CPU, 12TB
- ✓ Combination of relational database and flat file tree
- ✓ Correlative data requirements
 - Follow rigid metadata and nomenclature requirements
 - Compliance check on all incoming files (format/metadata)
 - Maintains backward compatibility with Envisat Cal/Val



Status

- ✓ Operational since February 10, 2005
 - Supporting Aura Validation Experiments since October 2004
- ✓ 175+ registered users
 - Europe, Asia and North America
 - NRAs, OMI AO, and NDSC PIs, validation contributors
- ✓ Statistics:
 - 1.6+ TB total, 150+ GB of validation data
 - 495,000 web hits (~1,800/day)
 - 65GB web transfers (~238MB/day)



Access

- ✓ Access guided by data exchange protocol
 - NASA Research Announcement PIs
 - Aura instrument Science Team members
 - OMI Announcement of Opportunity (AO) PIs

- ✓ Special arrangements:
 - Network for the Detection of Stratospheric Change (NDSC)
 - Specific PIs: MSC, station PIs, etc.
 - Satellite teams: NOAA, ACE, OSIRIS



Tools

- ✓ Fully searchable archive
 - Archived validation data and Aura datasets
- ✓ Aura instrument data subsetting
 - Collaborative effort with GES-DAAC
- ✓ Aura instrument FOVs
 - 15-day FOV predictions
 - Actual instrument FOV coincidences
- ✓ Data conversion tools (read/write), data formulation, search and automatization tools
- ✓ Web portal for validation
 - News, meeting proceedings, documentation, etc.



OMI coincidence with De Bilt

Location

Date

Aura FOV Coincidence Search – AVDC

http://avdc.gsfc.nasa.gov/Data/Search/avdc_overpass_search.php

Search – AVDC Aura FOV Coincidence S...

OVERVIEW DATA TOOLS DOCUMENTATION LINKS ST & WG

Data

- Aura Data
- FOV Predictions
- Search Data
- Browse Data
- Upload Data

AURA FOV COINCIDENCE SEARCH

• Back to AVDC Data Search
• Advanced AVDC Data Search (groundbased data only)

Search the AVDC relational database for correlative data in the AVDC compliant HDFv4 file format using Time/Geolocation search tool. (groundbased data only)

Select a LOCATION below:

DAR.ES.SALAAM; TANZANIA, UNITED REPUBLIC OF
DARWIN; AUSTRALIA
DAVIS; AUSTRALIA
DE.BILT; NETHERLANDS
DENALI.AK; UNITED STATES
DENVER.CO; UNITED STATES
DES.MOINES.IA; UNITED STATES

-- OR --

Enter COORDINATES (latitude and longitude in decimal degrees):

Latitude: (-90°N to +90°N)

Longitude: (-180°E to +180°E)

Please enter minimum and maximum DATETIME (UTC):

Year	Month	Day	Hour	Minutes	Seconds
Minimum:	2004	11	07	00	00
Maximum:	2004	11	09	23	59

Select ONE INSTRUMENT.

MLS OMI



OMI coincidence with De Bilt

Aura FOV Coincidence Search – AVDC

http://avdc.gsfc.nasa.gov/Data/Search/avdc_overpass_query.php

OVERVIEW **DATA** **TOOLS** **DOCUMENTATION** **LINKS** **ST & WG**

Data

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Please enter minimum and maximum DATETIME (UTC):

Minimum: Year Month Day Hour Minutes Seconds
Year: 2004 Month: 11 Day: 07 Hour: 00 Minutes: 00 Seconds: 00
Maximum: Year Month Day Hour Minutes Seconds
Year: 2004 Month: 11 Day: 09 Hour: 23 Minutes: 59 Seconds: 59

Select ONE INSTRUMENT:
 MLS OMI

Aura FOV Coincidence Results – AVDC

http://avdc.gsfc.nasa.gov/Data/Search/avdc_overpass_query.php

Aura FOV Coincidence Res...

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Aura validation data center

AURA FOV COINCIDENCE SEARCH RESULTS

5 Coincidences found using your current search criteria

Search Criteria:

- Aura Instrument: OMI
- Location: DE.BILT; NETHERLANDS (Latitude: 52.10°N Longitude: 5.18°E)
- Minimum Datetime: 2004-11-07 00:00:00 (UTC)
- Maximum Datetime: 2004-11-09 23:59:59 (UTC)

Instrument	Datetime (UTC)	Orbit Number
OMI	20041107T111940.803Z	1677
OMI	20041107T125633.908Z	1678
OMI	20041108T120151.695Z	1692
OMI	20041108T133944.810Z	1693
OMI	20041109T124502.598Z	1707

Exit/Close window

5 coincidences



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Data

✓ Aura datasets

- Instrument subsets (stations, geographic) for validation
- **Exclusive** access point to provisional Aura data
- Experimental products (for example OMI L3, L2G, TES v4)

✓ Validation data:

- NASA aircraft/balloon mission data (AVE, INTEX)
- NRA and OMI-AO data
- Satellite data: ACE/MAESTRO, SBUV/2, Odin
- Groundbased network data: CMDL, SHADOZ, MSC



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Data highlights

- ✓ Daily Aura subsets:
 - 520+ OVP for OMI O₃ products
 - 30 (going on 700) for OMI NO₂
 - MLS subsets over NDSC stations
 - TES GS online
- ✓ GB data since Aug. 2005
 - 2,215 MWR O₃ profiles
 - 350+ MWR water vapor profiles
 - 4,200+ Brewer days (MSC)
 - 692+ NDSC lidar O₃ profiles
 - 900+ ozonesondes from 36 stations
 - ~100 water vapor sondes
- ✓ Special
 - AVE coincidences
 - Area requests
 - ...
 - Contact AVDC



Collaboration

- ✓ Close coordination with the NDSC
 - Access to preliminary data in NRT
 - Collaborative effort in data homogenization
- ✓ Coordination with measurement networks
 - Provide of sonde launch schedules (Aura OVP)
 - NRT availability of preliminary data (MSC, NOAA-CMDL)
- ✓ Satellite teams
 - ACE mission - dataset availability and field campaign coordination
 - NOAA - NRT data release for validation
 - Envisat data exchange through OMI AO
- ✓ Open to suggestions



Contact Information

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